

### ABSTRACT

This invention presents Normalized Amplitude Hilbert Transform (NAHT) and Normalized Hilbert Transform(NHT) , both of which are new methods for computing Instantaneous Frequency. This  
5 method is designed specifically to circumvent the limitation set by the Bedorsian and Nuttall Theorems, and to provide a sharp local measure of error when the quadrature and the Hilbert Transform do not agree. Motivation for this method is that straightforward application of the Hilbert Transform  
10 followed by taking the derivative of the phase-angle as the Instantaneous Frequency (IF) leads to a common mistake made up to this date. In order to make the Hilbert Transform method work, the data has to obey certain restrictions.